

REMARKS

Claims 1-54 are pending in this application, and non-elected claims 1-15 and 43-54 have been withdrawn from consideration. Claim 16 has been amended to more particularly point out and distinctly claim subject matter encompassed by certain embodiments of Applicant's invention. Support for the amendment to claim 16 can be found in the application as originally filed, for example, in claims 1-15, and elsewhere. Claim 32 has been amended to correct an inadvertent typographical error in its dependency, which should be from claim 31 and not claim 29. Claim 34 has been amended solely to add a space that was missing from the term "poly(alkylene oxide)" according to a Claim Objection raised by the PTO at page 3 of the Action. No new matter has been added.

Election/Restriction

The PTO has acknowledged Applicant's election of Group II, claims 16-42, drawn to a gellan composition, in the reply filed January 20, 2006. Although claims 1-54 are pending in this application, non-elected claims 1-15 and 43-54 have been withdrawn from consideration.

Information Disclosure Statement

In the Action, the PTO asserts that the information disclosure statement filed January 10, 2005, fails to comply with 37 CFR 1.98(a)(2), which requires, *inter alia*, a legible copy of each non-patent literature publication *or that portion* which caused it to be listed (emphasis added). Applicant notes the handwritten annotation "NO COPY PROVIDED" over the entry for item BF in the information disclosure statement filed January 10, 2005, where item BF is listed as the single page, page 630 (*i.e.*, the "portion which caused it to be listed"), from "Gellan (PS-60)," in *Carbohydrate Chemistry*, Kennedy, J.F. (ed.), Oxford University Press, Oxford, 1987, Section 14.4.4. Applicant respectfully submits that a copy of the cited portion, *i.e.*, page 630, was submitted with the information disclosure statement on January 10, 2005, such that the submission was in compliance with 37 CFR 1.98(a)(2). Enclosed herewith please find a replacement copy of item BF (page 630). Applicant believes that the requirements of 37 CFR 1.98(a)(2) are

satisfied and requests clarification or correction if the PTO believes that these or any other requirements remain outstanding. Applicant also requests clarification of the statement at the bottom of page 2 of the Action that the information disclosure statement "has been placed in the application file, but the information referred to therein has not been considered", insofar as all items other than item BF appear to have been initialed by the Examiner.

Claim Objections

The PTO objects to an informality in claim 34, namely, a missing space in the recitation "poly(alkyleneoxide)". Accordingly, claim 34 has been amended to correct this informality.

Claim Rejections Under 35 USC § 112

Claims 20-28 and 32 stand rejected under 35 USC §112, second paragraph, for alleged indefiniteness. More specifically, the PTO alleges that the recitation "the size-separation property modifying polymer" in claim 32 lacks antecedent basis. The PTO is also unclear regarding the recitation "suitable for use" in claim 20, from which claims 21-28 directly or indirectly depend.

Applicant respectfully traverses these grounds for rejection and submits that the instant claims are clear and that they particularly point out and distinctly claim the invention in full compliance with 35 USC §112, second paragraph. As a first matter, claim 32 as amended herewith contains the proper antecedent basis for the recitation of poly(ethylene oxide) as "the size-separation property-modifying polymer." According to the present amendment, claim 32 properly depends from claim 31, which recites "a size-separation property-modifying polymer." Accordingly, claim 32 no longer suffers from any deficiencies in antecedent basis, such that withdrawal of the rejection under 35 USC §112, second paragraph, is respectfully requested.

With regard to claim 20 and its related dependent embodiments, the present invention is directed in pertinent part to a composition suitable for use in preparing an electrophoresis medium comprising gellan, and either no nucleic acid or nucleic acid at a concentration of less than 10 ppm based on the weight of the gellan. The instant specification

and claims abundantly provide clear description of what is a composition that is “suitable for use” in preparing an electrophoresis medium according to claim 20.

The presently claimed composition relates to an electrophoresis medium. As such, the specification discloses numerous criteria for determining its suitability for use in preparing an electrophoresis medium. For instance, the specification teaches (e.g., page 19, lines 1-22) suitable gellan concentrations for an electrophoresis medium that can be determined according to techniques that are commonly used in the art. Also, the specification (e.g., page 23, lines 8-16 and the table below) discloses suitable buffers and appropriate pH ranges for preparing an electrophoresis medium.

As an additional example, the specification teaches (e.g., page 4, lines 12-14) the formation of an electrophoresis gel using a suitable cross-linking agent. A preferred cross-linking agent is identified. Further examples disclose (e.g., page 16, lines 9-16) suitable DNase concentrations for use in preparing an electrophoresis medium that has either no nucleic acid or nucleic acid at a concentration of less than 10 ppm, based on the weight of the gellan. Additionally, Examples 1-5 (e.g., pages 30-33) disclose suitable criteria for preparing an electrophoresis medium.

Notwithstanding the foregoing, and without acquiescing to any rejection, claim 20 has amended to remove the recitation “suitable for use”, thereby obviating the rejection. Claims 20-28 and 32 are clearly supported by the specification, such that withdrawal of the rejections under 35 USC §112, second paragraph is respectfully requested.

Claim Rejections Under 35 USC § 102(b)

Claims 16-23, 25, 27-38, 40 and 42 stand rejected under 35 USC §102(b) as allegedly anticipated by Cole (U.S Patent No. 6,203,680). In particular, the PTO alleges that the subject matter of the instant claims is anticipated by a gellan composition disclosed in Cole. The PTO also rejects claim 16 as a product by process claim, alleging that the composition recited in claim 16 is anticipated by the gellan composition in Cole.

Applicant respectfully traverses these grounds for rejection and submits that the instant claims satisfy all the requirements of 35 USC §102(b). The present invention, as recited

in independent claims 17, 20, 29 and their related dependent embodiments, is directed in pertinent part to gellan compositions comprising water and gellan, which compositions contain either no nucleic acid or nucleic acid at a concentration of less than 10 ppm, based on the weight of the gellan.

As disclosed in the specification, the instant embodiments relate to providing gellan compositions having very low levels of nucleic acid contamination. Where the prior art lacks any teaching or suggestion of such a gellan composition having little or no nucleic acid, Applicant submits that the PTO has failed to establish a *prima facie* case of anticipation under 35 USC §102(b).

With regard to Cole, Applicant respectfully submits that the PTO fails to recognize that Cole does not disclose a gellan composition that contains either no nucleic acid or nucleic acid at a concentration of less than 10 ppm based on the weight of the water. More specifically, Cole discloses a gellan composition comprising water and gellan. Gellan, as disclosed in Cole, refers to a family of related carbohydrate polymers produced by bacteria such as *Sphingomonas* bacteria. It is known in the art, and disclosed in the instant specification, that gellan compositions such as those taught by Cole contain significant levels of nucleic acid contaminants. Cole does not teach the use of gellan compositions having very low levels of nucleic acid contamination, or no nucleic acid contamination at all, and the PTO provides neither evidence nor reasoning to demonstrate otherwise. Hence, the PTO has failed to establish a *prima facie* case of anticipation, as Cole does not teach or in any way suggest the subject matter of the instant claims. Applicant respectfully requests withdrawal of the rejections under 35 U.S.C. §102(b).

Claim 16, as amended herewith, is directed in pertinent part to a purified gellan composition prepared by the method of any of original claims 1-15. The PTO asserts that a product produced by a new process is not patentable if the product is the same as, or obvious over, a product of the prior art. For reasons given herein, Applicant respectfully submits that the product of claim 16 is distinct from the product disclosed in Cole, and therefore satisfies all the requirements of 35 U.S.C. §102(b).

As disclosed in the specification and recited in the presently amended claim, claim 16 relates to a gellan composition containing DNase. Additionally, embodiments described by parts (i) and (j) of amended claim 16 (corresponding to the product made by the method of original claims 9 and 10) relate to a method in which a gellan composition is prepared that contains deactivated DNase. In other words, in these embodiments the DNase is still present in the gellan compositions prepared according to the recited methods.

By contrast, Cole does not teach or suggest the use of purified gellan compositions according to the instant claim. Further, Cole does not teach the use of purified gellan compositions that contain DNase. Even more particularly, and as also elaborated upon below, Cole does not teach the use of purified gellan compositions that contain deactivated DNase. Applicant therefore submits that claim 16 is not anticipated by Cole, and respectfully requests withdrawal of the rejection under 35 USC §102(b).

Claim Rejections Under 35 USC § 103(a)

The PTO rejects claims 16-42 under 35 U.S.C. §103(a) for alleged obviousness over Cole (U.S. Patent No. 6,203,680; “Cole”) in view of Nochumson et al. (U.S. Patent No. 5,143,646). Specifically, the PTO asserts that Cole anticipates claims 16-23, 25, 27-28, 40, and 42; Cole is also discussed above. The PTO further asserts that Nochumson et al. remedy a conceded deficiency of Cole, by teaching the use of imidazole as a buffer in an electrophoretic resolving gel in a manner that renders the instant claims obvious. Additionally, the PTO alleges that Cole et al. (1999 *Appl. Biochem. Biotech.*, 82: 57-76; “Cole et al. (1999)”) teach that DNase I is present in a plasmid preparation used as a sample undergoing electrophoretic separation, thereby rendering obvious the subject matter of claim 16.

Applicant respectfully traverses these grounds for rejection, and submits that Cole and Nochumson, alone or in combination, fail to teach or suggest the presently claimed invention. Thus, the PTO has not set forth a *prima facie* case of obviousness under 35 USC §103(a). (*See In re Mayne*, 104 F.3d 133, 1341-43, 41 U.S.P.Q.2d 1451 (Fed. Cir. 1997) (PTO has the burden of showing a *prima facie* case of obviousness.)). The PTO must show (1) that the cited reference(s) teaches or suggests all claim elements; (2) that the reference provides some

teaching, suggestion, or motivation to combine or modify the teachings of the prior art to produce the claimed invention; and (3) that according to the teachings of the reference, a person having ordinary skill in the art will achieve the claimed invention with a reasonable expectation of success.

The present invention is directed in pertinent part to gellan compositions comprising water and gellan, said compositions containing either no nucleic acid or nucleic acid at a concentration of less than 10 ppm based on the weight of the gellan.

Cole does not anticipate claims 16-42, as Cole fails to teach or suggest gellan compositions containing nucleic acids at a concentration less than 10 ppm based on the weight of the gellan, for reasons discussed above. With regard to Nochumson, Applicant submits that disclosure therein of imidazole is not relevant. Nochumson, alone or in combination with the other cited documents, also fails to teach or suggest gellan compositions containing nucleic acids at a concentration less than 10 ppm. As with Cole, the PTO provides neither evidence nor reasoning to suggest otherwise. Therefore, the PTO has not shown that Cole and/or Nochumson teach or suggest all the claim elements of the present invention.

Applicant therefore respectfully submits that the PTO has not established a *prima facie* case of obviousness. As such, the instant claims satisfy all the requirements of 35 U.S.C. §103(a), and withdrawal of the rejection is respectfully requested.

With regard to the rejection of claim 16 over Cole et al. (1999), Applicant notes that claim 16 as amended herewith is a product by process claim that depends from the methods of original claims 1-15. Accordingly, claim 16 is directed in pertinent part to a purified gellan composition containing DNase, nucleic acid, and gellan, where the composition is maintained under conditions such that the DNase degrades at least some of the nucleic acid. Applicant submits that the publications cited by the PTO are inapposite where they fail to teach or suggest the desirability of providing purified gellan according to the instant claims.

The PTO concedes that neither Cole nor Nochumson teach purified gellan compositions that comprise DNase. Cole et al. (1999) fail to remedy this defect. Rather, Cole et al. (1999) teach digestion of a plasmid DNA with DNaseI prior to the addition of the plasmid prep to solidified gellan. The DNase digestion disclosed in Cole et al. (1999) is a limited

digestion that merely converts super-coiled DNA into the nicked or circular form, and in some cases, into truncated forms. The person having ordinary skill in the art would understand from Cole et al. (1999) that such use of a DNase would not degrade the DNA so as to provide purified gellan according to the instant claims.

Moreover, according to Cole et al. (1999), the mixture of DNase and gellan is not maintained under conditions where the enzyme can degrade at least some of the nucleic acid, because Cole et al. (1999) disclose that a solution of EDTA is added to stop the DNase reaction prior to addition of the reaction mixture to solidified gellan. Therefore, Cole et al. (1999) if anything teach away from the presently claimed invention.

Even assuming *arguendo*, that each element of the presently claimed invention was described in the cited references, the mere fact that the teachings of the prior art *can* be combined or modified, or that a person having ordinary skill in the art is *capable* of combining or modifying the teachings of the prior art, does not make the resultant combination *prima facie* obvious, as the prior art must also suggest the *desirability* of the combination (*see, e.g., In re Mills*, 16 USPQ2d 1430, Fed. Cir. 1990; *In re Fritch*, 23 USPQ2d 1780, Fed. Cir. 1992).

For reasons given herein, Cole et al. (1999) fail to provide a purified gellan composition according to claim 16. Thus, the PTO has not demonstrated any desirability of applying the disclosure in Cole et al. (1999) to provide a purified gellan composition as presently claimed. As such, Applicant respectfully submits that the PTO has not set forth a *prima facie* case of obviousness, and therefore, respectfully requests withdrawal of the rejection under 35 USC §103(a).

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable.
Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,
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